NOVOZHILOV, V. (UA1DQ), sud'ya po radiosportu

Mass participation and technical skills are of the utmost importance. Radio no.10:14 O '64. (MIRA 18:2)

NOVOZHILOV, V.B., dotsent; SHUL'TS, I.N., nauchnyy sotrudnik.

Effect of the method for preparing rocks for analysis to determine granulometric composition, specific weight, and plastic limits. Zap.Len.gor.inst.32 no.2:166-187 '56. (MLRA 10:2)

(Rocks--Analysis)

NOVOZHILOV, V D

The Applicati.. of Tissue Therapy in the Medical Treatment of Hyporeactive and Areactive Forms of Brucellosis. Zdravookhraneniye Kazakhstana, Vol 3, 1952, pp 24-26.

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237610006-5"

NOVOZHILOV V.D

NOVOZHILOV, V.D.

Isolated transverse rupture of the duodenum in closed trauma of the abdomen. Khirurgiia 33 no.6:126-127 Je '57. (MIRA 10:12)

1. Iz Kirovskoy rayonnoy bol'nitsy Kaluzhskoy oblasti.
(DUODENUM, rupture
isolated transverse in closed trauma of abdom., surg.)
(ABDOMEN, wounds and inj.
closed trauma causing isolated transverse tear of duodenum)

NOVOZHILOV, V.D.

[redacted] Successful treatment of a penetrating wound of the right ventricle. Khirurgiia 33 no.7:120 Jl '57. (MIRA 10:11)

1. Iz rayonnoy bol'nitsy g.Kirova Kaluzhskoy oblasti
(HEART--WOUNDS AND INJURIES)

NOVOZHILOV, V. F.

Novozhilov, V. F.

"Investigation of the operation of the SRN-4A and SRN-4V seedling-planting machines." Moscow Order of Lenin Agricultural Academy imeni K. A. Timiryazev. Moscow, 1956. (Dissertation for the Degree of Candidate in Agricultural Sciences.)

Knizhnaya Letopis'
No. 25, 1956. Moscow.

GORYACHKIN, M.I., kand.ekon.nauk, nauchnyy sotrudnik; RUSAKOV, G.K., kand.sel'skokhoz.nauk, nauchnyy sotrudnik; MASHKEVICH, N.G., kand.sel'skokhoz.nauk, nauchnyy sotrudnik; KLADCHIKOV, S.M., kand.sel'skokhoz.nauk, nauchnyy sotrudnik; NOVOZHILOV, V.F., kand.sel'skokhoz.nauk, nauchnyy sotrudnik; ALEKSANDROV, N.P., kand.sel'skokhoz.nauk; BUTKEVICH, B.G., kand.sel'skokhoz. nauk; KORNEV, K.G., kand.sel'skokhoz.nauk; GREBTSOV, P.P., red.; PEVZNER, V.I., tekhn.red.; TRUKHINA, O.N., tekhn.red.

[Plotting technological charts] Kak sostavit' tekhnologicheskie karty. Moskva, Gos.izd-vo sel'khoz.lit-ry, 1960. 78 p.
(MIRA 14:2)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut ekonomiki sel'skogo khozyaystva. 2. Vsesoyuznyy nauchno-issledovatel'skiy institut ekonomiki sel'skogo khozyaystva (for Goryachkin, Rusakov, Mashkevich, Kladchikov, Novozhilov).
(Farm management)

KLEMYSHEV, P.A.; KOZLOV, Ye.G.; BELOZERTSEV, A.G.; VOLODARSKIY, D.Ya.; GRACHEV, V.A.; KRUCHININ, M.I.; FILIMONOV, K.N.; KHLUDENEV, A.I.; ANDREYEV, P.P.; NOVOZHILOV, V.F.; GERSHANOV, S.V.; PYLAYEVA, A.P., red.; BALLOD, A.I., tekhn. red.; PEVZNER, V.I., tekhn. red.

[Economic efficiency of mechanization in agriculture] Ekonomicheskaia effektivnost' mekhanizatsii sel'skogo khoziaistva. Moskva, Izd-vo sel'khoz.lit-ry, zhurnalov i plakatov, 1961. 230 p. (MIRA 15:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut ekonomiki sel'skogo khozyaystva(for all except Pylayeva, Ballod, Pevzner).
(Farm mechanization)

NOVOZHILOV, V.I.; KULAKOV, I.N.

Automatic production line for manufacturing carcasses of springs fixed in continuous wattles. Der.prom. 8 no.2:16-17 F '59. (MIRA 12:2)

1. Komitet po delam izobrateniy i otkrytiy pri Sovete Ministrov SSSR.

(Furniture industry)

GRAF, L.E.; KOGAN, D.I.; NOVOZHILOV, V.I.

Hydraulic drill. Gor.zhur. no.1:76 Ja '63. (MIRA 16:1)
(Boring machinery)

[illegible], V.I., inzh.

[illegible]ethodological manual on the determination of economic efficiency of new equipment. Vest. mashinostr. 44 no.8:87 Ag '64. (MIRA 17.[illegible])

NOVOZHILOV, V.I., ispolnyayushchiy obyazannosti dotsenta

Thermal effectiveness of concrete heating panels. Nauch.dokl.vys. shkoly; stroi. no.1:239-245 '58. (MIRA 12:1)

1. Rekomendovana kafedroy otopleniya i ventilyatsii Moskovskogo instituta inzhenerov gorodskogo stroitel'stva Mosgorispolkoma.
(Radiant heating)

NOVOZHILOV, V.I.

Investigating the temperature field in air layers contiguous to a heated surface. Inzh.-fiz. zhur. no. 6:98-100 Je '58.(MIRA 11:7)

1. Institut inzhenernoy gorodskogo stroitel'stva Mosgorispolkoma, Moskva.

(Heat--Radiation and absorption)

NOVOZHILOV, V.I.

Heat radiation and surface temperature of heating apparatus in flat-panel heating systems. Vod. i san. tekh. no.8:1-8 O '60.
(MIRA 13:11)

(Radiant heating)

BELOUS, N.Kh., st. nauchn. sotr.; KAZANSKIY, Yu.P.; VDOVIN, V.V.; KLYAROVSKIY, V.M., KUZNETSOV, V.P., NIKOLAYEVA, I.V., NOVOZHILOV, V.I.; SENDERZON, E.M.; AKAYEV, M.S., BABIN, A.A.; BERDNIKOV, A.F.; GORYUKHIN, Ye.Ya.; NAGORSKIY, M.P., PIVEN', N.M.; BAKANOV, G.Ye., GEBLER, I.V.; SMOLYANINOV, N.M.; SMOLYANINOVA, S.I.; YUSHIN, V.I., D'YAKONOVA, N.D., REZAPOV, N.M.; KASHTANOV, V.A., GOL'BERT, A.V.; SIDOROV, A.P.; GARMASH, A.A.; BYKOV, M.S., BORODIN, L.V.; RYCHKOV, L.F.; KUCHIN, M.I.; SHAKHOV, F.N., glav. red.; SHIAKOVSKAYA, L.I., red.

[West Siberian iron ore basin] Zapadno-Sibirskii zhelezorudnyi bassein. Novosibirsk, Red.-izd. otdel Sibirskogo otdeniia AN SSSR, 1964. 447 p. (MIRA 17:12)

1. Akademiya nauk SSSR. Sibirskoye otdeleniye. Institut geologii i geofiziki. 2. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR (for Belous, Kazanskiy, Vdovin, Klyarovskiy, Kuznetsov, Nikolayeva, Novozhilov, Senderzon). 3. Institut gornogo dela (for Akayev). 4. Novosibirskoye geologicheskoye upravleniye Ministerstva geologii i okhrany nedr SSSR (for Babin, Berdnikov, Goryukhin, Nagorskiy, Piven').

(Continued on next card)

BELOUS, N.Kh.---(continued) Card 2.

Tomskiy politekhnicheskiy institut (f [illegible] Smolyaninov, Smolyaninova). 5. Sib[illegible] issledovatel'skiy institut geologii, geofiziki i mineral'nogo syr'ya (for Yushin, D'yakonova, Rezapov, Kasatanov, Gol'bert). 6. Institut ekonomiki sel'skogo khozyaystva (for Garmash). 7. Sibirskiy metallurgicheskiy institut (for Bykov, Borodin, Ry[illegible]). 8. Tomskiy inzhenerno-stroitel'nyy institut (for Kuch[illegible]). 9. Chlen-korrespondent AN SSSR (for Shakhov).

SINYAKOV, V.I.; NOVOZHILOV, V.I.

Comparative study of the microhardness of galenites from complex metal deposits in the Altai, eastern Transbaikalia, and the Maritime Territory. Geol. i geofiz. no.10:169-171 '64.

(MIRA 18:4)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR, Novosibirsk.

BELOUS, N.Kh.; NOVOZHILOV, V.I.

Paragenesis of exhalative-sedimentary iron and pyrite ores in the Mayna deposit. Trudy SNIIGGIMS no.35:101-111 '64.

(MIRA 18:5)

15-57-1-1034

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 1, p 165 (USSR)

AUTHORS: Novozhilov, V. N., Shul'ts, I. N.

TITLE: The Effect of the Method of Preparing Rocks on the Analyses to Determine Grain Size, Specific Gravity, and Limits of Plasticity (Vliyaniye sposoba podgotovki porody k analizu na opredeleniye granulometricheskogo sostava, udel'nogo vesa i predelov plastichnosti)

PERIODICAL: Zap. Leningr. gorn. in-ta, 1955 (1956) Vol 32, Nr 2, pp 166-187

ABSTRACT: By using a number of methods for preparing rocks for analysis and by comparing the results obtained, the authors conclude that the best separation of rocks that contain large quantities of carbonates and gypsum (rocks of the Tatarian stage of the Permian system) is obtained by treating with sodium pyrophosphate. They

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recommend a simple technique, requiring little time and no treatment with hydrochloric acid, for making grain-size analysis of high-carbonate marly rocks. A quantity of 10 g of rock is ground up with 10 ml saturated solution of sodium pyrophosphate. The pulverized mass is transferred to a conical flask and boiled for one hour with 200 ml of water. After boiling, the suspension is passed through a 0.25-mm screen into a cylinder and the sample is then drawn up by a pipette and the rate of fall of the particles is calculated according to Stoke's law. The method completely eliminates coagulation of the suspension and gives the best correspondence with the plasticity number. The authors conclude that determinations of specific gravity of the carbonate and gypseous rocks of the Tatarian stage in water, kerosene, and alcohol, all give approximately the same values. In kerosene, as a rule, the specific gravity is 0.02 less than in water. The degree of crushing of the sample, according to the authors, does not influence the value of specific gravity obtained. It is recommended that the specific gravity of such rocks be determined in

The Effect of the Method of Preparing Rocks (Cont.) 15-57-1-1034

water by the standard method. The presence of carbonates and gypsum strongly diminishes the value of the plasticity number in comparison with determinations for the same rocks when washed with carbonates and salts. The authors recommend that the plasticity number of highly carbonatic clay rocks be determined by the universally accepted standard method.

Card 3/3

I. M. G.

NOVOZHILOV, V.N., dotsent.

Methods for evaluating the content and composition of artificial soils for athletic plants. Zap.Len.gor.inst.32 no.2:158-165 '56. (MLRA 10:2)
(Engineering geology)

NOVOZHILOV, V.N.

Physicomechanical properties of ancient alluvial clayey rocks in the lower part of the middle Emba Valley (Aral-Tyube region). Zap. LGI 34 no.2:222-257 '58. (MIRA 12:6)
(Aral-Tyube region--Clay)

NOVOZHILOV, V N

MAKSIMOV, Vasiliy Mikhaylovich, dotsent, kand.geologo-miner.nauk; ASATUR, K.G., dotsent, kand.tekhn.nauk; DAVIDOVICH, V.I., dotsent, kand. tekhn.nauk; ALBUL, S.P., kand.geologo-miner.nauk; PAUKER, N.G., inzh.-gidrogeolog; OSTROUMOV, B.P., gidrotekhnik; ZAYTSEV, I.K., doktor geologo-miner.nauk; TOLSTIKHIN, N.I., prof., doktor geologo-mineral.nauk; REZNIKOV, A.A., kand.khim.nauk, starshiy nauchnyy sotrudnik; MERSHALOV, A.F., assistent; VOROTYNTSEV, V.T., dotsent, kand.tekhn.nauk; MARKOV, I.A., dotsent, kand.geologo-miner.nauk; KERKIS, Ye.Ye., dotsent, kand.geologo-miner.nauk; KHITROV, I.N., inzh.-geolog; BOROVITSKIY, V.P., kand.geologo-miner.nauk; RAVDONIKAS, O.V., kand.geologo-miner.nauk; ONIN, N.M., kand.geologo-miner.nauk; BASKOV, Ye.A., inzh.-gidrogeolog; NOVOZHILOV, V.N., dotsent, kand. geologo-miner.nauk; PEKEL'NYY, I.S., inzh.-gidrogeolog; NEVEL'SHTEYN, Yu.G., inzh.-gidrogeolog; BOSKIS, S.G., inzh.-gidrotekhnik; NIKIFOROV, Ye.M., inzh.-gidrogeolog; GATAL'SKIY, M.A., prof., doktor geologo-miner.nauk, nauchnyy red.; DOLMATOV, P.S., vedushchiy red.; GENNAD'YEVA, I.M., tekhn.red.

[Hydrologist's handbook] Spravochnoe rukovodstvo gidrogeologa. Leningrad, Gos.nauchno-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry, Leningr.otd-nie, 1959. 836 p. (MIRA 12:4)

1. Vsesoyuznyy geologicheskiy nauchno-issledovatel'skiy institut (for Reznikov).

(Hydrology)

SOV/3-59-5-27/34

22(1)

AUTHOR: Tolstikhin N.I., Doctor of Geologic-Mineralogical Sciences, Professor; Novozhilov, V.N., Candidate of Geologic-Mineralogical Sciences; Docent

TITLE: Intervuz Scientific Conferences. Problems of Training Mining Engineer-Hydrogeologists.

PERIODICAL: Vestnik vysshey shkoly, 1959, Nr 5, p 89 (USSR)

ABSTRACT: The problem of improving the practical and scientific-theoretical training of mining engineer-hydrogeologists has been raised. The Leningradskiy gornyy institut (Leningrad Mining Institute) devoted its conference, which took place in February this year, to this subject. In addition to 300 students, the conference was attended by workers of geological production organizations, collaborators of design and scientific research institutes of the Ukraine, Estonia, Lithuania, Kola Peninsula, the Urals,

Card 1/4

SOV/3-59-5-27/34

Intervuz Scientific Conferences. Problems of Training Mining Engineer-Hydrogeologists.

Siberia, Sakhalin, Central Asia, Moscow and Leningrad, as well as by vuz instructors of hydrogeology and engineering geology. Forty-five reports devoted to **theoretical**, methodological and practical problems of hydrogeology and engineering geology were discussed at the meetings. The report of Doctor of Geologic-Mineralogical Sciences, Professor F.A. Makarenko (Laboratoriya gidrogeologicheskikh problem AN SSSR - Laboratory of Hydro-Geological Problems of the AS USSR) - "The Thermal Waters of the USSR as a Source of Thermal Energy" aroused great interest. The address of Professor N.I. Tolstikhin of the Leningrad Mining Institute was dedicated to the genetic classification of underground waters. Docent V.D. Lomtadze of the same institut dealt in his report with the "Basic Problems of the Formation of Physico-Mechanical Properties in Clay Layers". V.A. Krotova, Scientific

Card 2/4

SOV/3-59-5-27/34

Intervuz Scientific Conferences. Problems of Training Mining Engineer-Hydrogeologists.

Worker of the Vsesoyuznyy neftyanoy geologo-razvedochnyy institut (All-Union Oil Geologic-Prospecting Institute), reported on the plutonic brines of the Volga-Ural Oblast' and Eastern Siberia; Engineer of the Lenmetroproyekt R.N. Kremneva- on the engineering-geological and hydrogeological conditions of the Leningrad subway. A special plenary meeting discussed the new curriculum of the specialty "Hydrogeology and Engineering Geology", and the programs of basic subjects. The indications and wishes expressed were taken into consideration when working out the curriculum and programs. Gostoptekhizdat published in time for the conference "The Hydrogeologist's Reference Book". Simultaneously with the conference, a large exhibition of hydrogeological devices, field laboratories, engineering-geological equipment, students' graduation designs

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SOV/3-59-5-27/34

Intervuz Scientific Conferences. Problems of Training Mining Engineer-Hydrogeologists.

etc. was opened. The first copy of the hydrogeological chart of the USSR was displayed at the exhibition. The chart was drawn up under the direction of Doctor of Geologic-Mineralogical Sciences I.K. Zaytsev.

ASSOCIATION: Leningradskiy gornyy institut imeni G.V. Plekhanova (Leningrad Mining Institute imeni G.V. Plekhanov).

Card 4/4

KLIMENTOV, Petr Platonovich; PYKHACHEV, Georgiy Borisovich; TOLSTIKHIN, N.I., prof., retsenzent; SHAGOYANTS, S.A., prof., retsenzent; DAVIDOVICH, V.I., dots., retsenzent; ASATUR, K.G., dots., retsenzent; NOVOZHILOV, V.N., dots., retsenzent; PAUKER, N.G., starshiy nauch. sotr., retsenzent; KRASIL'NIKOVA, N.P., ass., retsenzent; ABRAMOVA, S.K., otv. red.; SLAVOROSOV, A.Kh., red. izd-va; IL'INSKAYA, G.M., tekhn. red.

[Dynamics of underground water] Dinamika podzemnykh vod. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1961. 514 p. (MIRA 14:12)

(Water, Underground)

NOVOZHILOV, V.N.

Field apparatus for preparing film monoliths. Izv. vys. ucheb. zav.; geol. i razv. 4 no.3:129-130 Mr. '61. (MIRA 14:6)

1. Leningradskiy gornyy institut imeni G.V. Plekhanova.
(Rocks, Sedimentary--Analysis)

NOVOZHILOV, V.N.; LEKHTIMYAKI, E.V.

Trend in draining bauxite deposits in Tikhvin District. Zap. LGI 44 no.2:109-117 '62. (MIRA 16:3)
(Tikhvin District--Mine drainage) (Tikhvin District--Bauxite)

NOVOZHILOV, V.N.

Physicomechanical properties of overburden rocks in the deposit of Tikhvin bauxites. Zap. LGI 44 no.2:152-162 '62. (MIRA 16:3)
(Tikhvin District--Rocks) (Tikhvin District--Bauxite)

NOVOZHILOV, V.N.

Estimation of the stability of strip mine slopes in the mining of Tikhvin bauxite deposits. Zap. LGI 48 no.1:10 -111 '63. (MIRA 17:8)

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MAKATS, G.M.; MAKEYEV, B.A.; NOVOZHILOV, V.P.

Unit for solving the problem of optimum laying-out of a strip for rolling two type sizes. Avtom. i prib. no.4:33-36 O-D '63. (MIRA 16:12)

NOVOZHILOV, V.V.

Regularities concerning the development of cost calculation.
Trudy LIEI no.44:9-33 '63.

Tendencies in the development of measuring labor productivity in
the U.S.S.R. Ibid.:34-43

Methods for determining the optimal operational life of machinery.
Ibid.:44-70 (MIRA 17:9)

NOVOZHILOV, V.V., doktor ekon. nauk, prof., otv. red.; LAN.SKAYA, K.A., red.

[Mathematicoeconomic problems; transactions] Matematiko-ekonomicheskie problemy; trudy. Leningrad, Izd-vo Leningr. univ., 1963. 88 p. (MIRA 17:7)

1. Leningradskaya konferentsiya po voprosam primeneniya matematiki v sotsialisticheskoy ekonomike. 1st, 1961.

NOVOZHILOV, V.V.

The law of value and the planning of prices. Trudy LIEI no.53:9-55 '65. (MIRA 18:8)

NOVOZHILOV, V. V.

"Computation of Tensions in a Thin Sperical Shell in the Case of An Arbitrary Load." Dok AN, 27, No. 6, 1940.

NOVOZHILOV, V. V.

"General Theory of Stability of Thin Shells." Dok AN 32, No. 5, 1941.

NOVOZHILOV, V. V.

"On the Solution of Thin Shell Theory Problems in Stresses and Moments"
Dok AN No. 9, 1943.

NOVOZHILOV, V. V.

"On an Error in a Hypothesis of the Theory of Shells" Dok AN 38, Nos. 5-6 1943.

NOVOZHILOV, V.V.

Novožilov, V. V. New method for the calculation of thin shells. Bull. Acad. Sci. URSS. Cl. Sci. Tech. [Izvestia Akad. Nauk SSSR] 1946, 35–48 (1946). (Russian)

The author adjoins to the classical Kirchhoff-Love equations of thin shells three equations of compatibility deduced by A. Goldenweiser [Appl. Math. Mech. [Akad. Nauk SSSR. Prikl. Mat. Mech.] 4, 35–42 (1940); 8, 3–14 (1944); these Rev. 6, 251] and derives a system of six differential equations (of eighth order) for the stresses. If Poisson's ratio μ is set equal to zero, the system becomes symmetric with respect to a combination of stresses, so that by introducing new dependent variables it can be reduced to a system of three equations of the fourth order. The resulting equations call for no simplifications beyond those implicit in the Kirchhoff-Love theory. By neglecting, in the equations of equilibrium and compatibility, certain terms of the order δ/R (δ, thickness of the shell; R, radius of curvature) the original eighth-order system can be reduced to a fourth-order system when $\mu \neq 0$. This latter result can be viewed as a generalization of Meissner's theory of symmetric deformation of shells of revolution.

The author states that his formulation of the problem greatly simplifies the solution of several classes of problems in shell theory and promises to publish soon his results on pipes of arbitrary cross-section and on shells of revolution of arbitrary form. *I. S. Sokolnikoff* (Los Angeles, Calif.).

Cent. Sci Res. Inst im. A. N. Krylov

Source: Mathematical Reviews, Vol. 8, No. 2

NOVOZHILOV, V.V.

Novožilov, V. V. The calculation of cylindrical shells. Bull. Acad. Sci. URSS. Cl. Sci. Tech. [Izvestia Acad. Nauk SSSR] 1946, 803–816 (1946). (Russian)

The paper is given to the illustration of the method of solution of problems on thin elastic shells, proposed by the author in the paper reviewed above. The following problems are considered: (a) circular cylindrical plates and circular cylinders with freely supported ends, (b) deformations of pipes whose cross-sections have two mutually orthogonal axes of symmetry. *I. S. Sokolnikoff.*

Source: Mathematical Reviews, Vol. 8, No. 2

Cent. Sci. Res. Inst. im. A.N. Krylov

NOVOZHILOV, V.V.

Novožilov, V. V. Calculation of shells—bodies of revolution. Bull. Acad. Sci. URSS. Cl. Sci. Tech. [Izvestia Akad. Nauk SSSR] 1946, 949–962 (1946). (Russian)

The author applies his formulation of the general theory of thin shells [cf. the second preceding review] to shells of revolution. He deduces as special cases the well-known results of E. Meissner on symmetrically loaded shells of revolution and E. Schwerin's results on the wind loading of domes. An interesting new result is that the problems of wind loading of shells of revolution can be reduced to the integration of a second-order linear differential equation. The paper contains an illustration of the application of the theory to spherical and catenoidal shells. [For cylindrical shells cf. the preceding review.] *I. S. Sokolnikoff.*

Source: Mathematical Reviews, Vol 3, No. 2

NOVOZHILOV, V.V.

Novozhilov, V. V. A generalization of the method of complex displacements to the non-homogeneous problem of the theory of shells. C. R. (Doklady) Acad. Sci. URSS (N.S.) 53, 503-506 (1946).

In an earlier paper [Bull. Acad. Sci. URSS. Cl. Sci. Tech. [Izvestia Akad. Nauk SSSR] 1946, 35-48 (1946); these Rev. 8, 18], the author introduced three auxiliary functions, called complex stresses, in terms of which the system of equations of thin shell theory reduced to a system of three equations of the fourth order. In this paper he obtains the corresponding result for equations in displacements, by introducing three functions called "complex displacements." [See also Bull. Acad. Sci. URSS. Cl. Sci. Tech. [Izvestia Akad. Nauk SSSR] 1946, 803-816, 949-962 (1946); these Rev. 8, 118.] *I. S. Sokolnikoff* (Los Angeles, Calif.).

Source: Mathematical Reviews, Vol 8 No. 6

NOVOZHILOV, V. V.

"A Generalization of the Method of Compl[illegible] Displacements to the Non-Homogeneous Problem of the Theory of Shells," Dok. AN, 53, No. 6, 1947

NOVOZHILOV, V. V.

Fundamentals of the nonlineal theory of elasticity Leningrad, Gos. izd. tekhn.-teoret. lit-ry, 1948. 211 p. (Sovremennye problemy mekhaniki)

This book makes a twofold contribution to the available literature on elasticity; in addition to presenting a penetrating account of the modern thinking on the nonlinear theory, it is also a clear account of the fundamentals of the modern mathetatical theory as a whole. In fact, one gets the impression that the author's rejection of the usual linearizing assumptions in the derivation of the fundamental relations enhances (rather than encumbers) the reader's comprehension of the geometric and physical assumptions of the theory. In its use of mathematical tools the book falls between the engineering texts and, say, the work of Sokolnikoff and Mushelishvili. The use of tensors is avoided; however, the usually cumbersome component notation is employed with great skill. Except language difficulty, book would make an excellent companion piece to Prescott(Applied Elasticity Longmans, Green, London, '24) for use by 1st and 2nd yr grad. students. The present bk supplies the physical insight into the theory which is lacking in Prescott, but without the wealth of examples found in the latter work.

Analyses of strain, stress, and equilibrium equations are presented in full generality for homogeneous isitropic bodies and the classical relations are obtained by a 2-stage modification of the resulting expression. It is shown that the classical formulation contains 2 assumptions to the effect that (a) the strains and the angles of rotation of the body are small compared to unity, and (b) the products of the angles of rotation are small compared to certain corresponding components of strain. The specific strain energy of a body is represented as a series expansion in terms of the strain invariants and the stress-strain relations are given in terms of the coefficients of this expansion . The specific

NOVOZHILOV, V. V., Fundamentals of the nonlineal theory of elasticity, L, 1948.

'linearity assumptions underlying Hooke's law are thus made explicit. On the basis of two experimental observations of the behavior of the stress invariants, the same formulation (originally derived for conservative forces) is shown to yield the Hencky stress-strain equations for loading in plastic bodies. Two types of nonlinearity are shown to enter the problems of deformation of elastic bodies. The goemetrical nonlinearity results when the angles of rotation of the body and the strains are no longer negligible compared to unity. The physical nonlinearity results when the angles of rotation of the body and the strains are non longer nigligible compared to unity. The physical nonlinearity results when the strains are no longer negligible compared to certain physical constants of the material (proportional limits).

The chapter heading s are as follows: (I) Geometry of strain. (II) Equilibrium of a volume element; (III) Strain energy, boundary conditions, stress-strain law; (IV) Formulation of the elastic (boundary value) probaem in terms of stresses; (v) The problem of elastic stability; (VI) Deformation of elastic bodies. Chapter (VI) presents applications of nonlinear theory to the following cases: (a) bending of thin plates and shells; (b) bending and torsion of rods. An extensive bibliography is appended.

Mathematical Reviews. Vol. 12, No. 8.

NOVOZHILOV, V.V.

AID 848 - M
TREASURE ISLAND BOOK REVIEW [Supercedes AID 515 - I]

NOVOZHILOV, V. V.
TEORIYA TONKIKH OBOLOCHEK (Theory of thin shells). Sudpromgiz, 1951. 344 p., 5,000 copies printed.

ANALYSIS AND EVALUATION:
This book presents a thorough study by means of partial differential equations including differential geometry and vectorial analysis of the general theory of thin shells, calculation of their stresses and deformations, with special application to some concrete problems of engineering. The author bases his presentation on the elastic theory of plates, on works of Kirchhoff, Lamé, Gauss, Codazzi, Love and the Russian scientists B. G. Salerkin, A. I. Lur'ye, A. L. Gol'denveyzer, Kh. M. Mushtari and V. Z. Vlasov, but brings into the theory of shells much of his own approach and presentation, a development of more concise formulae and an emphasis on the extent of approximation which is made in some simplified mathematical expressions.

This book was intended for scientific workers and engineers engaged in the field of construction of boilers, turbines, instruments, airplanes, ships and in the design of thin coverings

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NOVOZHILOV, V. V., Teoriya tonkikh obolochek

and roofings. It can also be used as a textbook by students of senior grades of universities and technical institutions of higher learning.

The book is divided into four parts: 1) general theory of elastic thin shells. 2) momentless (membrane) theory of shells. 3) calculation of cylindrical shells. 4) calculation of shells with surfaces of revolutions.

Part I. (pp. 5-85) starts with the outline of general concepts and hypotheses. Shells are defined as thin curved plates the thickness of which (δ) is very small in comparison to their other dimensions and their raddii of curvature R, namely $1/1000 \leqslant \frac{\delta}{R} \leqslant 1/50$. A linear expression has been chosen for the problem of calculating stresses and deformations, i.e., the displacements are assumed to be very small in comparison to the shell's thickness, and the deformations not to exceed the proportional limit. This theory of shells is presented as based on the theory of plates, not as first advanced by Cauchy and Poisson

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(the method of series development on the power of z of all displacements and stresses, z being the distance of points from the middle surface of the plate) but mainly as suggested by Kirchhoff, who in determining the strain components for thin curved plates made the following assumptions: 1) Straight-line fibers of a plate normal to its undeformed middle surface are deformed into normals of the deformed middle surface and remain straight-line, retaining their original length. 2) Stress components normal to the middle surface are small compared to other stress components and may be neglected in stress-strain relations. The method of Kirchhoff, even if not absolutely correct, is considered simpler and closer to the theory of beams. This method was later supplemented by A. Love and further improved and simplified into the canonical form of equations by A. I. Lur'ye and V. V. Novozhilov. The two assumptions made by Kirchhoff are maintained in this book and the extent of errors in simplified formulae is ascertained.

The general concept of the theory of surfaces is presented as an extention of the theory of thin flat plates and applied to thin shells. The differential geometry of a surface is analysed, whereby the notations of vector analysis are used.

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Two independent parameters α_1 and α_2 are introduced and constitute a system of orthogonal curvilinear coordinates for points on the surface. The differential relationships, between parameters A_1, A_2 (the so-called Lamé parameters) and the radii of curvature R_1, R_2 are given. It is shown that four functions A_1, A_2, R_1 and R_2 of the two parameters α_1 and α_2, if they are selected at random, do not, in general, determine any surface, and that A_1, A_2 can be considered as Lamé parameters and R_1 R_2 as main radii of curvature of the surface only in such case when they satisfy the conditions of the equations of Gauss and Codazzi (equ. 2.30 and 2.28, p.16)

Next, formulae are derived expressing the displacement components of a point selected at random of the shell in relation to the displacement of a corresponding point of the middle surface (p. 17-20).

Analysis of the shell's deformation and the deformation of its middle surface shows that if the two starting assumptions are maintained for thin shells the law of changes of deformations along their width and of changes of their corresponding stresses can be considered linear (p. 26).

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The deformation of the shell's middle surface is adequately characterized by 6 parameters: ε_1, ε_2 (parameters of unit elongation of the middle surface on coördinate axes), ω (parameter of shear of the middle surface), $\varkappa_1$, $\varkappa_2$ (parameters characterizing changes in the curvature of the middle surface due to deformation) and τ (parameter characterizing the rotation of the middle surface) (p. 28).

Having studied the geometrical properties of the shell's deformation, the author analyses stresses (normal and shearing) and moments. The equilibrium of a shell element bounded by 4 surfaces perpendicular to the middle surface under the influence of interior and exterior forces is analysed and six equilibrium equations of stresses and moments are derived with ten unknown. (equ. 7.4, 7.8) This statically indeterminate problem is then solved by eliminating some of the unknown in applying the laws of elastic deformations and thus equations of continuity of stresses and displacements (equations of compatibility as related to thin shells) and strain-energy are developed. (equ. 10.10 and 10.16) Those equations are then rewritten, whereby the auxiliary complex variables are introduced and are called complex stresses.

The equations are then presented, first, with the Poisson's ratio equal to zero (equ. 14.11) and then for any value of μ. (equ. 16.10 and 16.14) Those differential equations are finally given in a simplified form as presented by Mushtari-Vlasov. (equ. 17.7 and 17.14).

Part II. (pp. 85-166) deals with the momentless theory of shells in which in the analysis of the equilibrium of a shell element all moments are neglected. Such an omission is justified when the shell's rigidity is very small (membrane), or when the bending and rotation of the middle surface are very small. The basic equations derived in Part I are rewritten by neglecting the appropriate terms. The author analyses cases in which such omissions can be justified and the errors can be neglected. The membrane theory is then applied to surfaces of revolution which as a general rule are subdivided into symmetrical and anti-symmetrical loading. The lines of principal curvatures will be the meridians and the parallels. The method for solving differential equations in the membrane theory of surfaces of revolution is then outlined, based on the expansion of exterior loads and of all stresses acting in a shell into trigonometrical

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series on the angle φ (equ. 6.4), whereby the author presents one formal solution for whole classes of surfaces obtained by revolution of circles, parabolas, ellipses and hyperbolas. The symmetrical deformation of shells with surfaces of revolution is analysed (equ 7.10) and in example the membrane theory is applied to: 1) different kinds of domes - spherical, paraboloid, ellipsoid, hyperboloid, 2) reservoirs (tanks) and their bottoms and heads - cyllindrical (closed on both ends) with spherical, elliptical and curved (with two radii of curvatures) bottoms and heads. Shells with constant stress distribution are then analysed, such as: 1) the drop-shaped reservoir, 2) the most advantageous form of a dome, that with a decreasing shell thickness at center. Next, antisymmetrical loadings of the "wind-type" are examined and the equations for such shells rewritten. (11.10, 11.11 and 11.13).

The membrane theory of shells is then applied to surfaces of revolution of second degree curves and also, as a specific case, to spherical shells. As an example, a dome resting on four columns is calculated. Affine transformations of similitude of known stresses of a shell of one form to stresses of second unknown shell of an arbitrary form appropriately loaded are

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presented. This method of the membrane theory permits the calculation of a shell of one form to be replaced by a calculation of a shell of a different form. As an example the calculation of an elliptical vessel head is replaced by the calculation of a semispherical. The statically determinate problems of the membrane theory, i.e., the cases where stresses can be calculated without determining displacements are then extended to statically indeterminate problems, i.e., where stresses can be calculated only by determining displacements. At first, displacements of a shell with a surface of revolution are discussed when the shell is symmetrically deformed. Deformations of such shells are analysed when no elongation or shear of their middle surface occur. Displacements of pure deflection for a spherical shell and for a catenoid are then calculated. The end of this part deals with the analysis of membrane stresses and displacements in determinate and indeterminate cylindrical shells: 1) closed (tube) and 2) open (cylindrical coverings and roofings).

Part III. (pp. 167-238) is devoted to the calculation of cylindrical shells. The author introduces complex variables and develops his own partial differential equations of the

fourth order for the calculation of cylindrical shells of any length (equ. 4.1). He examines these specific cases:
1) cylindrical shells reinforced with transverse ties,
2) curved plates formed as a section of a circular cylinder by two cuts along the generatrices and two cuts along the directrices, and derives equations for the expression of their complex stresses and strains. Calculation of stresses is next extended to an oval shell composed of four cylindrical plates, whereby the boundary conditions of the larger plates and of the smaller plates are analysed and the coefficients are then calculated in tabular form.

The author discusses next a simplified theory for long cylindrical shells (p. 202) whereby certain members in the general equations are disregarded and integration constants and coefficients are calculated in tabular form. The above method is then applied to the calculation of: 1) cylindrical plates (sections of circle cylinder), reinforced by transversal elastic ties, 2) tubes (long circular cylinders) of a cross section of an oval with 2 axes of symmetry freely supported at the ends, 3) cylindrical shells with stepwise changeable radii

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of curvature, 4) tubes with arbitrary boundary conditions on their end surfaces.

This part ends with a brief discussion of a semi-membrane theory of cylindrical shells. In developing and simplifying the above equations the author carefully points out the order of approximations. In solving the equations with complex variables real and imaginary portions of complex stress resultants and displacements must be considered separately.

Part IV. (pp. 238-334) analyses the surfaces of revolution. The basic equations for stress-strain calculations are again derived with complex variable notation. (equ. 2.17, 4.5 and 4.6) First, symmetrically loaded (boundary and surface) shells are considered. The solution of the linear differential equations of the second order in asymptotic integration is given (§ 6) and followed by an approximate integration of a homogeneous differential equation for symmetrical deformation (§ 7) and approximate expression for stresses, moments and strains of a symmetrically-deformed shell of revolution (§ 8). The coefficient of yielding for the rim of the shell is calculated.

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The outlined theory is then applied to cylindrical reservoirs and their bottoms (or vessel heads). Those calculations of symmetrically deformed shells of surfaces of revolution are based on the assumption that partial solutions can be arrived at from the momentless theory and the homogeneous problem can be determined as the first approximation which the asymptotic method offers. Such a procedure can be used for most problems. However, in some cases such a procedure can not be applied, e.g., in symmetrically strained toroid-shaped shells. The elastic equilibrium of such shells can be reduced to a differential equation of the second order for the complex resultant T by which all displacements, stress resultants and couples can be expressed. Applying transformations to the corresponding homogeneous equation of a toroid shell and using approximations for the coefficients, a general solution is given in the form of Bessel functions, namely the Hankel functions of the first and second kind (p. 282), which are suitable for numerical computation throughout the whole interval. Particular solution of the equation under uniform pressure is given in the form of a Fourier series; its coefficients are expressed as continued fractions.

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Next, stresses are calculated in bottoms (for vessel heads) of a combined curved line, composed of a smooth connection of a shell having a form of spherical segment with a section of a torus, bound by two parallel circles. Such bottoms can be convex or convex-concave; some examples are given (cylinder, spherical segment, portion of a torus, interconnection of a cylinder, torus and sphere).

Shells of revolution under unsymmetrical loadings are investigated, whereby the "wind type" loads are considered.

General expressions for strains, stresses and moments are derived, and some simplified forms are presented in which certain members are neglected. A shell of revolution with only one border (such as a dome without openings) is then examined and the boundary conditions analysed. The method of integration of those equations is then outlined and also the measure of approximations ascertained. Next, spherical shells with arbitrary loadings are calculated. As an example of shells of revolution with negative Gauss curvature the catenoid shell is analysed. Finally an approximate theory of integration of shells

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of revolution of arbitrary form and under arbitrary loadings are discussed. At the end, an extensive literature is listed, divided according to the different parts of the book, a total of 163 titles, out of which 105 are Russian (1914-1950.

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NOVOZHILOV, V. V.

PA 193T47

USSR/Mathematics - Torroidal Shells, Computation of — Sep/Oct 51

"Symmetrical Deformation of Torroidal Shells," Ye. F. Zenova, V. V. Novozhilov

"Prik Matem i Mekh" Vol XV, No 5, pp 521-530

Subject was previously studied by G. Wissler (Zurich, 1916); K. Stange (Ing Archiv, 1931, Vol XI); V. I. Feodos'yev ("Inzhynernyy Sbornik Ak Nauk SSSR," 1947, Vol IV, No 1) who gave the soln in the form of slowly converging power series. Last deficiency is avoided by authors, who use Hankel

193T47

USSR/Mathematics - Torroidal Shells, Computation of (Contd) — Sep/Oct 51

functions, computed by means of rapidly converging power series. In a particular case trigonometric series are used. Submitted 18 Jun 51.

193T47

NOVOZHILOV, V. V.

USSR/Physics - Static Tests Nov/Dec 51

"Principles Governing the Treatment of the Results of Static Tests on Isotopic Materials," V. V. Novozhilov, Leningrad, Leningrad State U.

"Priklad Matemat i Mekh" Vol XV, No 6, pp 709-722

Novoshilov considers a nonlinear elastic medium and the strains and stresses generated in it. Shows that earlier obtained formulas remain effective for the case of results from static tests for any isotopic material. Obtains simpler solns than his previous ones. Submitted 6 Aug 51.

198T97

NOVOZHILOV, V.V.

4000

Novožilov, V. V. On the relation between stress and strain in a nonlinear elastic medium. Akad. Nauk SSSR. Prikl. Mat. Meh. 15, 183–194 (1951). (Russian)

In his textbook on nonlinear theory of elasticity [Foundations of nonlinear theory of elasticity, Moscow-Leningrad, 1948; these Rev. 12, 651] the author developed generalized stress-strain equations in terms of the derivatives of the strain energy function. In this paper he interprets these relations in terms of three generalized moduli of nonlinear elasticity: a generalized bulk modulus, a generalized shear modulus and a third one which is defined as the "phase angle between the stress and strain deviators." The stress-strain relations are derived in terms of these moduli and some implications with respect to the theory of plasticity and anisotropic behavior are pointed out. *H. I. Ansoff.*

Source: Mathematical Reviews, Vol 13 No. 9

NOVOZHILOV, V.V.

Novožilov, V. V. **On an approximate method of solution of boundary problems for ordinary differential equations.** Akad. Nauk SSSR. Prikl. Mat. Meh. 16, 305–318 (1952). (Russian)

Given the differential equation $L(y)+f(x,y)=F(x)$, with two-point boundary conditions at a and b, L being a linear differential operator, the author seeks a suitable y_1 for starting the iteration $L(y_{i+1})=F(x)-f(x,y_i)$ assumed convergent. He takes $y_1=a_1\varphi_1(x)+\cdots+a_m\varphi_m(x)$, with convenient φ's, determining the a's to minimize the integral square of $y_1^{(k)}-y_2^{(k)}$, for whatever k is deemed appropriate to the problem. Admitting the lack of rigorous justification, the author [illegible] that "in any [illegible] of the [illegible] of the rule for construction adopted above appear sufficiently convincing," and works out three numerical examples. A. S. Householder (Oak Ridge, Tenn.).

1. NOVOZHILOV, V. V.

2. USSR (600)

4. Deformation (Mechanics)

7. Physical interpretation of invariants of stress used in the theory of plasticity, Prikl. mat. i mekh., 16, No. 5, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February, 1953. Unclassified.

NOVOZHILOV, V. V.

[illegible] Committee on Stalin Prizes [illegible] Council of Ministers [illegible] science and inventions announces that the following scientific works, [illegible] tific books, and textbooks have been submitted for competition for Stalin Prizes [illegible] the years 1952 and 19[illegible]. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb [illegible] Apr [illegible])

Name	Title of Work	Nominated by
Novozhilov, V. V.	"The Theory of Thin Shells"	Leningrad State University imeni A. A. Zhdanov

NOVOZHILOV, V. V.

FD-839

USSR/Mathematics - Plasticity theory

Card 1/1 : Pub. 85 - 4/14

Author : Novozhilov, V. V. (Leningrad)

Title : Class of complex loads which is characterized by the preservation of the directions of the main axes

Periodical : Prikl. mat. i mekh., 18, 415-424, Jul/Aug 1954

Abstract : Considers the frequently employed relations among the stresses and strains in an initially isotropic elastic-plastic medium. Notes their advantage for finding the exact description of the process of complex loads. Twelve references, 4 USSR (A. A. Il'yushin, G. A. Smirnov-Alyayev, and author).

Institution : --

Submitted : May 12, 1954

KOZHEVNIKOVA, M.K. (Leningrad); NOVOZHILOV, V.V. (Leningrad)

Approximate theory of the hindered torsion of closed thin-walled rods accounting for distortions in the cross sections. Izv.AN SSSR Otd.tekhn.nauk. no.9:72-83 S '56. (MLRA 9:9)
(Elastic rods and wires) (Torsion)

NOVOZHILOV, V.V.

40-21-2-17/22

AUTHOR: Novozhilov, V.V. (Leningrad)

TITLE: On the Center of a Deformation (O tsentre izgiba)

PERIODICAL: Prikladnaya Matematika i Mekhanika, 1957, Vol 21, Nr 2, pp 281-284 (USSR)

ABSTRACT: The author proves that for the determination of the center of a deformation it is not necessary to solve the problem of the deformation of a bar by a transverse force, but that it is sufficient to know the torsion of the bar. If the solution of the problem of torsion is known, then the center of the deformation can be found by quadratures. In his investigations the author restricts himself to bars with a simply connected cross section.

SUBMITTED: December 29, 1956

AVAILABLE: Library of Congress

1. Bars—Deformation—Theory

Card 1/1

NOVOZHILOV, V. V.

AUTHORS: Kadashevich, Yu. I., Novozhilov, V. V. 20-4-11/52

TITLE: The Theory of Plasticity Which Takes Prestressing Into Account (Teoriya plastichnosti, uchityvayushchaya effekt Baushingera)

PERIODICAL: Doklady AN SSSR, 1957, Vol. 117, Nr 4, pp. 586-588 (USSR)

ABSTRACT: The authors here suggest a theory of plasticity of quasi-isotropic bodies which is based on the following relations between the plastic deformations and tensions: $d\varepsilon^p_{ij} = \bar{\sigma}'_{ij} df(\bar{T})$; $s_{ij} = 2g(\Gamma)\varepsilon^p_{ij}$, $\bar{\sigma}_{ij} = \sigma_{ij} - s_{ij}$, $\bar{\sigma}'_{ij} = \bar{\sigma}_{ij} - (1/3)\sigma\delta_{ij}$, $\sigma = \sigma_{ii}$; $\bar{T} = \sqrt{(1/2)\bar{\sigma}'_{ij}\bar{\sigma}'_{ij}}$; $\Gamma = \sqrt{(1/2)\varepsilon^p_{ij}\varepsilon^p_{ij}}$. s_{ij} is denoted here as tensor of the remanent tensions and $\bar{\sigma}_{ij}$ is denoted as tensor of the active tensions. In the theory considered here, the stretching-strain limit has the same form as in the theory of flow, but the center of the flow limit shifts according to the above-mentioned first equation. The following can be said with respect to the tensions S_{ij}: A) They are equal to zero in the moment of the occurence of the first plastic deformations. B) They depend on the plastic deformations according to the principle of elastic

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APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237610006-5"

20-4-11/52

'The Theory of Plasticity Which Takes Prestressing Into Account

curves generally pass between those curves which were determined by means of the theory of flow and the theory of small plastic deformation. d) A remanent deformation is observed with the circulation on the flow limit assumed with the theory of flowing. e) An essential part of the work which is applied to plastic deformation (~10%) is not converted into heat. There is 1 figure, and 7 references, 4 of which are Slavic.

PRESENTED: October 7, 1957, by L. I. Sedov, Academician

SUBMITTED: September 27, 1957

AVAILABLE: Library of Congress

Card 3/3

16(1);24(6) PHASE I BOOK EXPLOITATION SOV/2041

Novozhilov, Valentin Valentinovich

Teoriya uprugosti (Theory of Elasticity) Leningrad, Sudpromgiz, 1958. 369 p. 5,000 copies printed.

Scientific Ed.: K.F. Chernykh; Ed.: Yu.S. Kazarov; Tech Ed.: L.M. Shishkova.

PURPOSE: This is a textbook for students, aspirants, engineers, and scientific workers specializing in strength analysis of various structures.

COVERAGE: The book is a development of the same author's monograph "Osnovy nelineynoy teorii uprugosti" (Fundamentals of the Nonlinear Theory of Elasticity) published in 1948. It considers all problems of the theory of elasticity from a single point of view without giving preference to any variant of the theory. The book includes a number of concepts such as that of a stress-free body, concen-

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trated surface force,etc. The author thanks K.F. Chernykh, N.F. Morozov, V.A. Nikitin, Z.P. Kamentseva,and V.Ya. Pavilaynen. There are 63 references: 35 Soviet, 11 English, 11 French, and 6 German.

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Theory of Elasticity

Bibliography

AVAILABLE: Library of Congress

IS/bg
8-6-59

Card 12/12

AUTHOR: Kadashevich, Yu.I. and Novozhilov, V.V. (Leningrad)

40-22-1-7/15

TITLE: A Plasticity Theory in Which Residual Microstresses are Taken Into Account (Teoriya plastichnosti, uchityvayushchaya ostatochnyye mikronapryazheniya)

PERIODICAL: Prikladnaya Matematika i Mekhanika, 1958, Vol 22, Nr 1, pp 78-89 (USSR)

ABSTRACT: The inequality dt > 0 is frequently applied as a criterion for the character of a deformation, where T is an expression which can be calculated from the different principal stresses of the problem. The limit which separates the range of elastic deformations from the range of plastic deformations then is generally determined by the equation T = C, where C is the value of the intensity of the tangential stresses in a certain moment. If the given relation is applied, then one obtains a plastic range, the limits of which are similarly enlarged in all directions, whereby, however, the form of the plastic range remains unaltered. But this contradicts to the observations. In experiments it is stated that the magnitude of the range does not only change, but also its form and fur-

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A Plasticity Theory in Which Residual Microstresses are Taken Into Account 40-22-1-7/15

thermore that a displacement of the range can occur.
In the present paper it is tried to develop a plasticity theory in which the displacement of the center of the plastic deformation range is taken into account. The deformation of the range itself is neglected in this case, since different other authors calculated this influence and their results can be directly transferred to the present case too.
With the aid of the author's results effects can be explained which could not well be theoretically comprehended up to now, e.g. the Bauschinger effect and the divergence of the main flow directions for plastic deformations with the principal stress directions. There are 7 figures, and 11 references, 3 of which are Soviet, and 8 American.

SUBMITTED: October 5, 1957

Card 2/2

CHUVIKOVSKIY, V.S., referent; NOVOZHILOV, V.V., referent; PERNIK, A.D., referent; YEGOROV, I.T., referent; TITOV, I.A., referent; FIRSOV, G.A., referent; BOYTSOV, G.V., inzh.; BASIN, A.M., referent

Scientific engineering conference on hydromechanics and structural mechanics of ships. Sudostroenie 24 no.7:86-87 Jl '58. (MIRA 11:9)
(Naval architecture--Congresses)

BALAYEV, D.N.; BEZUKLADOV, V.F.; DEREVYANKO, Yu.G.; IOFFE, A.F.; ISAKOV, I.S.; MATTES, N.V.; MOISEYEV, A.A.; NEGANOV, V.I.; NOVOZHILOV, V.V.; PAVLENKO, G.Ye.; PERSHIN, V.I.; POPOV, V.F.; RETIVOY, V.S.

Seventy-fifth birthday of Academician IUlian Aleksandrovich Shimanskii. Sudostroenie 24 no.12:66-67 D '58. (MIRA 12:2)

(Shimanskii, IUlian Aleksandrovich, 1883-)

NOVOZHILOV, V.V.

a. Plenary Session - 14 December 1959, 1900 hours

1) Academician V S Nemchinov - Introductory Remarks
2) Academician A N Dorodnitsyn, A A Lyapunov - Prospects for the Use of Electronic Computers in the State Apparatus
3) Professor V V Novozhilov - Current Problems in the Application of Mathematical Methods in USSR Economic Research and Planning

2) A Ya Boyarskiy - The Differential Equations of Expanded Reproduction
3) L V Kantorovich - Optimal Planning and Economic Indicators
4) A A Konyus - Mathematical Analysis of the Organic Composition of Production
5) S I Vedeta - Mathematical Analysis of Rates and Proportions in the National Economy (Primarily in Determining the Economic Efficiency of Capital Investment)
6) B I Plyushkin, R P Nazarov - Price Relationships in Expanded Reproduction
7) L M Dudkin and V S Yakimen - Statistical [sic] and Dynamic Models of a Socialist National Economic Balance in Physical Terms

c. Evening Session - 15 December 1959, 1600 hours
II. The Theory of Linear Programming

1) G S Rubinshtein - Review of Methods for the Solution of Linear Programming Problems
2) A L Lur'ye - Algorithmic Solutions of Transport Problems Through Approximation by Means of Hypothetically Optimal Plans
3) Ya P Gerchuk - The Algebra of Linear Programming
4) B V Kishal'shteyn - Recommendation for a Method of Re-computing Matrices of Total Input Coefficients under Conditions of Changing Technology.
5) S Chetyrkin - A Practical Interpretation of Kantorovich's Controlling Multipliers
6) Titov and Barsov - Linear Programming Methods and Material Supply

d. Morning Session - 16 December 1959, 1000 hours
III. Economic Models and Dynamic Programming

1) V V Novozhilov - Mathematical Models of the National Economy in Bourgeois Economics and a Critique Thereof
2) B N Mikhalevskiy - Mathematical Methods of Determining the Maximum Efficiency of Capital Investment
3) V V Shlyapentokh - Concerning the Economic Cycle Models and Dynamic Economic Models of Bourgeois Econometricians
4) V V Trigubenko - Problems in the Application of Dynamic Programming in Economic Research Abroad
5) L Gor'kov - Single-Product Economic Models and the Analysis of Certain Economic Indicators
6) V I Romanovskiy - The Dynamic Programming Method and Its Use in Economics
7) B I Oparin - The Unfolding (stvornaya) Matrix as a Model for the Application of Mathematical Methods in Long-Term Economic Planning

e. Evening Session - 16 December 1959, 1600 hours
IV. The Transportation Problem

1) B I Volovoy - Finding the Most Suitable Assignment of Various Types of Fleet Vessels to Lines
2) A M Faynzil'berg - Extremal Methods in Economic Research on the Optimum Spatial Distribution of Projects
3) S P Rumyantseva - The Application of Linear Programming to Air Transport Economics

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report submitted at the Soviet Conference on Problems in the Application of Mathematical Methods in Economic Research, Leningrad, 15-21 January 1960.

NOVOZHILOV, V V

The Theory of Thin Shells. Groningen, P. Noordhoff, 1959.
XVI, 376 p. diagrs., graphs, tables
Translated from the original Russian: Teoriya Tonkikh Obolochek. Leningrad, 1958.
References: P. 367-372.

S/179/60/000/01/033/034
E073/E535

AUTHOR: Novozhilov, V.V.

TITLE: On the Work of K. N. Shevchenko and Criticism of This Work by D. D. Ivlev

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Mekhanika i mashinostroyeniye, 1960, Nr 1, pp 189-190 (USSR)

ABSTRACT: In the Nr 2, 1958 issue of Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, D. D. Ivlev published a contribution "On Some of the Work of K. N. Shevchenko on the Theory of Plasticity". The reply by K. N. Shevchenko to the criticism of D. D. Ivlev was published in the Nr 9, 1958 issue as a letter to the editor "On the Problem and Method of Solving Certain Elastic-Plastic Problems". The Editorial Board has requested Corresponding Member of the Ac.Sc., USSR V. V. Novozhilov to examine the published material and this article contains his comments and contributions to the controversy. Novozhilov considers that the critical comments of D. D. Ivlev were justified. There are 6 Soviet references.

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PHASE I BOOK EXPLOITATION SOV/6064

Novozhilov, Valentin Valentinovich

Teoriya tonkikh obolochek (Theory of Thin Shells). 2d ed., rev. and enl. Leningrad, Sudpromgiz, 1962. 430 p. 5,500 copies printed.

Reviewer: R. M. Finkel'shteyn, Candidate of Technical Sciences; Scientific Ed.: K. F. Chernykh; Ed.: T. A. Kliorina; Tech. Ed.: P. S. Frumkin.

PURPOSE: This book is intended for scientific workers and engineers working in the fields of shipbuilding, boiler-, turbine-, and instrument fabrication, aircraft construction, and design of thin-walled coverings of structures. It may also serve as a manual for aspirants and senior students at shipbuilding institutes and other schools of higher technical education and universities.

COVERAGE: Problems associated with stress and strain analysis of thin shells (shallow shells) are discussed within the scope of linear theory, i.e., the displacements are assumed to be small compared to the shell thickness and the

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strains to be within the proportional limit. The book includes the general theory of the subject, as well as its application to a number of particular problems of practical interest. The term "complex" (stresses, displacements, etc.) used in the text means that there are involved functions of a complex variable). No personalities are mentioned. There are 288 references: 164 Soviet (4 of which are translations), 77 German, 35 English, 8 French, 2 Italian, 1 Dutch, and 1 Yugoslav.

TABLE OF CONTENTS:

NOVOZHILOV, V.V. (Leningrad)

And more on the postulate of isotropy. Izv.AN SSSR.Otd.tekh.nauk.
Mekh.i mashinostr no.1:205-208 Ja-F '62. (MIRA 15:3)
(Plasticity)

NOVOZHILOV, V.V.; CHERNYKH, K.F.

Calculation involving shells under concentrated stress. Issl. po uprug. i plast. no.2:48-58 '63. (MIRA 16:8)
(Strains and stresses)

ACCESSION NR: AP4015967 S/0040/63/027/005/0794/0812

AUTHOR: Novozhilov, V. V. (Leningrad)

TITLE: On the relationship between stress and strain in elementary isotropic inelastic bodies (geometrical problem)

SOURCE: Prikl. matem. i mekhan., v. 27, no. 5, 1963, 794-812

TOPIC TAGS: tensor curve, stress strain relationship, inelastic solid body, orthonormal base tensor, subspace

ABSTRACT: Certain properties of tensor curves having a direct application in mechanics of continuous media particularly the stress-strain relationship of inelastic solid bodies, have been studied. Only three-dimensional symmetric tensors of second rank are considered, and analysis is given in Cartesian coordinates. These tensors are treated as elements of a six-dimensional space H_6 defined by

$$A_{ik}B_{kj} + B_{ik}A_{kj} \in H_6,$$

where A and B are the elements of the tensor T_{ij} also defined by

$$T_{ij} = \sum_{m=1}^{6} t_{(m)} h_{ij}^{(m)}.$$

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Orthonormal basis vectors h_{ij}^{m} are shown to lead to two expressions defining the fundamental scalar and tensor properties of orthonormal base tensors, given respectively by

$$\boxed{\sum_{m=1}^{6} (h_m)^2 = 3} \quad \text{and} \quad \boxed{\sum_{m=1}^{6} h_{ik}^{(m)} h_{kj}^{(m)} = 2\delta_{ij}}.$$

Proceeding from the orthonormal base, it is shown that H_6 can be divided into mutually perpendicular subspaces H_n and H_{6-n}. The properties of several subspaces are discussed, such as a deviator subspace D_5, a deviator subspace with single general principal direction, and a subspace of coaxial deviators a_{ij}, b_{ij} related by

$$\boxed{b_{ij} = A_1 a_{ij} + A_2 \left[a_{ik} a_{kj} - \frac{1}{3}(a^2)\delta_{ij}\right]}.$$

The conditions for obtaining a minimum number of tensors as basis in H_6 are considered. It is shown that in order to construct basis tensors in H_6 it is sufficient to have two three-dimensional symmetric tensors of second rank on condition that neither has a general principal direction, and further, it is

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sufficient to have three three-dimensional vectors that are noncoplanar. The Serret-Frenet generalised formulas for H_6 tensor curves are derived, allowing one to determine a natural datum r_{ij}^m for each tensor curve $R_{ij}(s)$. The properties of tensor algebra established above are then applied to the case of an elementary solid body, and a relationship is established between the stress σ_{ij} and strain ε_{ij}. It is shown that the two-dimensional strain curve can be related to a two-dimensional, three-dimensional, and in the general case 5-dimensional deviator curve of the stress tensor. For the latter, this is given by

$$\boxed{\begin{aligned}\sigma'_{ij} = {} & f_0\delta_{ij} + f_1 e'_{ij} + f_2 \dot{e}'_{ij} + f_3 e'_{ik} e'_{kj} + f_4 \dot{e}'_{ik}\dot{e}'_{kj} + \\ & + f_5 (e'_{ik}\dot{e}'_{kj} + \dot{e}'_{ik} e'_{kj}) + f_6 (e'_{ik} e'_{kp} \dot{e}'_{pj} + \dot{e}'_{ik} e'_{kp} e'_{pj}) + \\ & + f_7 (\dot{e}'_{ik}\dot{e}'_{kp} e'_{pj} + e'_{ik}\dot{e}'_{kp}\dot{e}'_{pj}),\end{aligned}}$$

where the primed quantities are the deviators of the stress-strain tensors. Orig. art. has: 120 equations.

ASSOCIATION: none

Card 3/3 Sub: 1 June 63

NOVOZHILOV, V.V. (Leningrad)

"Certain problems of plasticity under complex loading"

Report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow 29 Jan - 5 Feb 64.

ACCESSION NR: AP4040569 S/0040/64/028/003/0393/0400

AUTHOR: Novozhilov, V. V. (Leningrad)

TITLE: Complex stress and prospects of a phenomenological approach to the study of microstresses

SOURCE: Prikladnaya matematika i mekhanika, v. 28, no. 3, 1964, 393-400

TOPIC TAGS: complex stress, phenomenological approach, microstress, deformation, rheological property, load path, initial isotropy, flow theory, plastic deformation, dry friction, deviator, plastic resistance, metal fatigue

ABSTRACT: The author advocates a phenomenological approach to the study of certain aspects of plastic flow. In particular, he assumes initial isotropy, independent of resistive forces of time, so that these are essentially dry friction. Such assumptions apply to many metals and their alloys at moderate temperatures. The Baushinger effect should be especially helpful for the study of microstresses in polycrystals in order to learn more about metal fatigue. Orig. art. has: 15 formulas.

ASSOCIATION: none

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